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10/796,441	03/08/2004	Michael Radomsky	DEPYP003D1C1	1814

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BEYER WEAVER & THOMAS LLP
P.O. BOX 778
BERKELEY, CA 94704-0778

EXAMINER	
HENRY, MICHAEL C	

ART UNIT	PAPER NUMBER
1623	

DATE MAILED: 12/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/796,441	RADOMSKY, MICHAEL	
	Examiner	Art Unit	
	Michael C. Henry	1623	

-- The MAILING DATE of this communication appears on th cover sheet with th correspondence address --

P riod for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6/10/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 11-22 are pending in application

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 11, 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Finkenaur et al. (EP 312208 A1).

In claim 11, applicant claims "A composition for the treatment of diseased, injured or abnormal bone, said composition comprising an effective amount of a growth factor and hyaluronic acid, said composition being sufficient to enhance bone growth rate and magnitude and having a viscosity in the range of about 10 to 10^6 cP and biodegradability sufficient to persist upon application at a site of desired bone growth for a period of time sufficient to enhance said bone growth rate and magnitude." Finkenaur et al. disclose applicant's composition comprising an effective amount of a growth factor (EGF) and hyaluronic acid, having a viscosity of 44,000 cps (page 8, example 4, lines 30-49). It should be noted that claim 11 is a composition claim and the intended use of the composition does not add to the patentability of the composition claimed. Furthermore, although Finkenaur et al. is silent about the properties or characteristics of the composition which pertains to its biodegradability and effect of enhancing bone growth rate and magnitude, Mori et al.'s composition is the same as applicant's composition (comprising growth factor and hyaluronic acid of the same viscosity), and consequently it should inherently possess

the same properties. Claims 13 and 14, which are drawn to compositions of claim 11 wherein the hyaluronic acid is uncrosslinked and hyaluronic acid of specific range of % by weight in solution, are also encompassed by this rejection, since Finkenaur et al. hyaluronic acid is uncrosslinked and contains the same % by weight of hyaluronic acid (i.e., 1%) (page 8, example 4, lines 30-49).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Finkenaur et al. (EP 312208 A1).

In claim 11, applicant claims "A composition for the treatment of diseased, injured or abnormal bone, said composition comprising an effective amount of a growth factor and hyaluronic acid, said composition being sufficient to enhance bone growth rate and magnitude and having a viscosity in the range of about 10 to 10^6 cP and biodegradability sufficient to persist upon application at a site of desired bone growth for a period of time sufficient to enhance said bone growth rate and magnitude. Claim 12 is drawn to a composition according to claim 11 wherein said viscosity is about 75,000 cp. Dependent claims 15 and 16 are drawn to compositions wherein said growth factor is bFGF, and bFGF of specific concentration (mg/ml) range in the composition.

Finkenaur et al. disclose a composition comprising an effective amount of a growth factor (EGF) and hyaluronic acid, having a viscosity of 44,000 cps (page 8, example 4, lines 30-49). It should be noted that claim 11 is a composition claim and the intended use of the composition does not add to the patentability of the composition claimed.

The difference between applicant's claimed composition and the composition taught by Finkenaur et al. is that the applicant's composition is the viscosity of the composition and the type of FGF used in the composition. However, Finkenaur et al. disclose that compositions of different viscosities (for example 1,000 to 12,000,000) (see page 2, lines 32-50) and polypeptide growth factors such as basic-FGF (bFGF) can be used (see page 3, lines 36-43).

It would have been obvious to one having ordinary skill in the art, at the time the claimed invention was made to prepare a composition comprising a combination of a polypeptide growth factor such as bFGF and hyaluronic acid that has a viscosity suggested by Finkenaur et al, to treat topical and incisional wounds.

One having ordinary skill in the art would have been motivated to prepare a composition comprising a combination of a polypeptide growth factor such as bFGF and hyaluronic acid that has a viscosity suggested by Finkenaur et al, to treat topical and incisional wounds depending on the severity of the wound and the individual that is being treated.

Claims 17-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunstan et al. (WO 95/24211) in view of Brismar (US 5,432,167).

In claim 17, applicant claims "A method of treating diseased, injured or abnormal bone at a site of desired bone growth comprising the step of applying to said site a composition comprising an effective amount of a mixture of hyaluronic acid and a growth factor, said

composition being sufficient to enhance bone growth rate and magnitude and having a viscosity in the range of about 10 to 10^6 cP and biodegradability sufficient to persist at said site for a period of time sufficient to enhance said bone growth rate and magnitude." Dependent claims 18-22 are drawn to a method wherein said viscosity of the composition is about 75,000 cp, the hyaluronic acid is uncrosslinked hyaluronic acid, the hyaluronic acid in said composition is of specific concentration range, the growth factor is bFGF, and bFGF of specific concentration (mg/ml) range in the composition.

Dunstan et al. disclose a method of bone healing with bFGF (see page 15, lines 2-1 and abstract). In addition, basic FGF (bFGF) is angiogenic "in vivo" (Gospodarowicz et al., (1979) Exp. Eye Res., 28:501-514) and has neurotrophic properties (Morrison et al., (1986) Proc. Nat'l Acad. Sci. U.S.A., 83:7537-7541).

Brismar discloses that hyaluronic acid can be used to treat bone fractures (injured bone) (see abstract and col. 2, lines 47-54).

The difference between applicant's claimed method and the method taught by Dunstan et al. is that the applicant's composition also contains hyaluronic acid and is of a specific viscosity range. However, Brismar discloses that hyaluronic acid can be used to treat bone fractures (injured bone) and the use of compositions containing different amounts of hyaluronic acid, which affect the viscosity of the compositions, depends on factors like the severity of the bone injury or damage and the individual treated.

It would have been obvious to one having ordinary skill in the art, at the time the claimed invention was made, in view of Dunstan et al. and Brismar, to have used the method of Dunstan et al. to treat injured bone with a composition comprising a combination of a bFGF and

hyaluronic acid, since the combination of compounds that are used to treat the same diseases or condition are well known in the art. More specifically, it is obvious to combine individual compositions taught to have the same utility to form a new composition for the very same purpose. In re Kerkhoven, 626 F.2d 846, 205 U.S.P.Q. 1069 (C.C.P.A. 1980).

One having ordinary skill in the art would have been motivated in view of Dunstan et al. and Brismar, to use the method of Dunstan et al. to treat injured bone with a composition comprising a combination of a bFGF and hyaluronic acid, because a skilled artisan would reasonably be expected to prepare a composition comprising a combination of the compounds taught by Dunstan et al. and Brismar, to treat bone injury based on type and/or severity of the bone injury.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 17-22 are rejected under the judicially created doctrine of double patenting over claims 1-5 of U. S. Patent No. 6,221,854 B1 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: In claim 17, applicant claims "A method of treating diseased, injured or abnormal bone at a site of desired bone growth comprising the step of applying to said site a composition comprising an effective amount of a mixture of hyaluronic acid and a growth factor, said composition being sufficient to enhance bone growth rate and magnitude and having a viscosity in the range of about 10 to 10^6 cP and biodegradability sufficient to persist at said site for a period of time sufficient to enhance said bone growth rate and magnitude." In claim 18, applicant claims "A method according to claim 17 wherein said viscosity is about 75,000 cP." In claim 19, applicant claims "A method according to claim 17 wherein said hyaluronic acid is uncrosslinked." In claim 20, applicant claims "A method according to claim 17 wherein said hyaluronic acid in said composition comprises about 0.1-4% by weight of said composition." In claim 21, applicant claims "A method according to claim 17 wherein said growth factor comprises bFGF." In claim 22, applicant claims "A method according to claim 21 wherein said bFGF is present in a range of about 10^{-6} to 100 mg/ml in said composition."

Radomsky, in claim 1, claims "A method of treating diseased, injured or abnormal bone at an intra-articular site of desired bone growth comprising the step of applying to said site a composition comprising an effective amount of a mixture of hyaluronic acid and a growth factor sufficient to enhance bone growth rate and magnitude and having sufficient viscosity and biodegradability sufficient to persist at said site for a period of time sufficient to enhance said bone growth rate and magnitude." In claim 2, Radmonsky claims "A method according to claim 1 wherein said hyaluronic acid is uncrosslinked." In claim 3, Radmonsky claims "A method

according to claim 1 wherein said hyaluronic acid in said composition comprises about 0.1-4% by weight of said composition." In claim 4, Radmonsky claims "A method according to claim 1 wherein said growth factor comprises bFGF." In claim 5, Radmonsky claims "A method according to claim 4 wherein said bFGF is present in a range of about 10^{-6} to 100 mg/ml in said composition."

The difference between applicant's claimed method and the method of Radmonsky is that applicant's treat bone at a site of desired bone growth whereas Radmonsky treats bone at a specific site (intra-articular).

It would have been obvious to one having ordinary skill in the art, at the time the claimed invention was made to have used the method of Radmonsky to treat bone at other desired sites than the specific site claimed by Radmonsky.

One having ordinary skill in the art would have been motivated, to use the method of Radmonsky to treat bone at other desired sites than the specific site claimed by Radmonsky.

Claims 11-22 are rejected under the judicially created doctrine of double patenting over claims 1-5 and 6-10 of U. S. Patent No. 5,942,499 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: In claim 11, applicant claims "A composition for the treatment of diseased, injured or abnormal bone, said composition comprising an effective amount of a growth factor and hyaluronic acid, said composition being sufficient to enhance bone growth rate and magnitude and having a viscosity in the range of about 10 to 10^6 cP and biodegradability sufficient to persist

upon application at a site of desired bone growth for a period of time sufficient to enhance said bone growth rate and magnitude." In claim 12, applicant claims "A composition according to claim 11 wherein said viscosity is about 75,000 cP." In claim 13, applicant claims "A composition according to claim 11 wherein said hyaluronic acid is uncrosslinked." In claim 14, applicant claims "A composition according to claim 11 wherein said composition comprises 0.1-4% by weight of hyaluronic acid in solution." In claim 15, applicant claims "A composition according to claim 11 wherein said growth factor comprises bFGF." In claim 16, applicant claims "A composition according to claim 15 wherein said bFGF is present in said composition in a range of about 10^{-6} to 100 mg/ml of said composition."

Radomsky, in claim 1, claims "A composition for the treatment of diseased, injured or abnormal bone comprising an effective amount of an injectable mixture of a growth factor and hyaluronic acid sufficient to enhance bone growth rate and magnitude, said mixture having sufficient viscosity and biodegradability to persist upon application at an orthotopic or intraosseous site of desired bone growth for a period of time sufficient to enhance said bone growth rate and magnitude." In claim 2, Radmonsky claims "A composition according to claim 1 wherein said hyaluronic acid is uncrosslinked." In claim 3, Radmonsky claims "A composition according to claim 1 wherein said composition comprises 0.1-4% by weight of hyaluronic acid in solution." In claim 4, Radmonsky claims "A composition according to claim 1 wherein said growth factor comprises bFGF." In claim 5, Radmonsky claims "A composition according to claim 4 wherein said bFGF is present in said composition in a range of about 10^{-6} to 100 mg/ml of said composition."

The difference between applicant's claimed composition and the composition of Radmonsky is that applicant's composition is of specific viscosity range.

It would have been obvious to one having ordinary skill in the art, at the time the claimed invention was made to have prepared the composition of Radmonsky of specific viscosity range to treat bone conditions, since Radmonsky discloses that a composition of sufficient viscosity can be used.

One having ordinary skill in the art would have been motivated, to have prepared the composition of Radmonsky of specific viscosity range to treat bone conditions, since Radmonsky discloses that a composition of sufficient viscosity can be used.

In claim 17, applicant claims "A method of treating diseased, injured or abnormal bone at a site of desired bone growth comprising the step of applying to said site a composition comprising an effective amount of a mixture of hyaluronic acid and a growth factor, said composition being sufficient to enhance bone growth rate and magnitude and having a viscosity in the range of about 10 to 10^6 cP and biodegradability sufficient to persist at said site for a period of time sufficient to enhance said bone growth rate and magnitude." In claim 18, applicant claims "A method according to claim 17 wherein said viscosity is about 75,000 cP." In claim 19, applicant claims "A method according to claim 17 wherein said hyaluronic acid is uncrosslinked." In claim 20, applicant claims "A method according to claim 17 wherein said hyaluronic acid in said composition comprises about 0.1-4% by weight of said composition." In claim 21, applicant claims "A method according to claim 17 wherein said growth factor comprises bFGF." In claim 22, applicant claims "A method according to claim 21 wherein said bFGF is present in a range of about 10^{-6} to 100 mg/ml in said composition."

Radomsky, in claim 6, claims "A method of treating diseased, injured or abnormal bone at an orthotopic or intraosseous site of desired bone growth comprising the step of applying to said site a composition comprising an effective amount of an injectable mixture of hyaluronic acid and a growth factor sufficient to enhance bone growth rate and magnitude, said mixture having sufficient viscosity and biodegradability to persist at said site for a period of time sufficient to enhance said bone growth rate and magnitude." In claim 7, Radmonsky claims "A method according to claim 6 wherein said hyaluronic acid is uncrosslinked." In claim 8, Radmonsky claims "A method according to claim 6 wherein said hyaluronic acid in said composition comprises about 0.1-4% by weight of said composition." In claim 9, Radmonsky claims "A method according to claim 6 wherein said growth factor comprises bFGF." In claim 10, Radmonsky claims "A method according to claim 9 wherein said bFGF is present in a range of about 10^{-6} to 100 mg/ml in said composition."

The difference between applicant's claimed method and the method of Radmonsky is that applicant's treat bone at a site of desired bone growth whereas Radmonsky treats bone at a specific site (orthotopic or intraosseous).

It would have been obvious to one having ordinary skill in the art, at the time the claimed invention was made to have used the method of Radmonsky to treat bone at other desired sites than the specific site claimed by Radmonsky.

One having ordinary skill in the art would have been motivated, to use the method of Radmonsky to treat bone at other desired sites than the specific site claimed by Radmonsky.

Claims 11-15 are rejected under the judicially created doctrine of double patenting over claims 1-5 of U. S. Patent No. 6,703,377 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: In claim 11, applicant claims "A composition for the treatment of diseased, injured or abnormal bone, said composition comprising an effective amount of a growth factor and hyaluronic acid, said composition being sufficient to enhance bone growth rate and magnitude and having a viscosity in the range of about 10 to 10^6 cP and biodegradability sufficient to persist upon application at a site of desired bone growth for a period of time sufficient to enhance said bone growth rate and magnitude." In claim 12, applicant claims "A composition according to claim 11 wherein said viscosity is about 75,000 cP." In claim 13, applicant claims "A composition according to claim 11 wherein said hyaluronic acid is uncrosslinked." In claim 14, applicant claims "A composition according to claim 11 wherein said composition comprises 0.1-4% by weight of hyaluronic acid in solution." In claim 15, applicant claims "A composition according to claim 11 wherein said growth factor comprises bFGF." In claim 16, applicant claims "A composition according to claim 15 wherein said bFGF is present in said composition in a range of about 10^{-6} to 100 mg/ml of said composition."

Radomsky, in claim 1, claims "A composition for the treatment of diseased, injured or abnormal bone comprising an effective amount of an injectable mixture of a growth factor and hyaluronic acid sufficient to enhance bone growth rate and magnitude, said mixture having sufficient viscosity and biodegradability to persist upon application at an orthotopic or

intraosseous site of desired bone growth for a period of time sufficient to enhance said bone growth rate and magnitude." In claim 2, Radmonsky claims "A composition according to claim 1 wherein said hyaluronic acid is uncrosslinked." In claim 3, Radmonsky claims "A composition according to claim 1 wherein said composition comprises 0.1-4% by weight of hyaluronic acid in solution." In claim 4, Radmonsky claims "A composition according to claim 1 wherein said growth factor comprises bFGF." In claim 5, Radmonsky claims "A composition according to claim 4 wherein said bFGF is present in said composition in a range of about 10^{-6} to 100 mg/ml of said composition."

The difference between applicant's claimed composition and the composition of Radmonsky is that applicant's composition is of specific viscosity range.

It would have been obvious to one having ordinary skill in the art, at the time the claimed invention was made to have prepared the composition of Radmonsky of specific viscosity range to treat bone conditions, since Radmonsky discloses that a composition of sufficient viscosity can be used.

One having ordinary skill in the art would have been motivated, to have prepared the composition of Radmonsky of specific viscosity range to treat bone conditions, since Radmonsky discloses that a composition of sufficient viscosity can be used.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Henry whose telephone number is 571-272-0652. The examiner can normally be reached on 8:30 am to 5:00 pm; Mon-Fri. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James O. Wilson can be

reached on 571-272-0661. The fax phone number for the organization where this application or proceeding is assigned is 703 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-1235.

JAMES O. WILSON
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600

MCH

November 22, 2004.